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ABSTRACT

As a pedagogy, curriculum integration has global and local significance, as the central focus in teaching this way is to enhance students' learning through the vehicle of personal concerns and social issues. These issues and concerns form the basis of a negotiated curriculum of direct relevance to the sociocultural world of young people in diverse settings. The challenge for research in curriculum integration is to investigate the learning process as it unfolds in all its complexity, and the role of the teacher in both scaffolding and promoting students' intellectual, social, and emotional growth. Teachers' professional development in curriculum integration is, therefore, crucial and includes a number of issues, such as: teachers need to recognize and understand the complexity of learning, both their own learning and the learning of children; teachers need to critique their own practice to bridge the gap between rhetoric and reality; and teachers need to make a commitment to power sharing when making curriculum decisions with students. (Contains 18 references.) (Author/SM)

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"They Keep Asking Questions and Want To Know More": Enhancing Students' (and Teachers') Learning through Curriculum Integration

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Paper presented at the combined Annual Meeting of the Australian Association for Research in Education and the New Zealand Association for Research in Education (Melbourne, Australia, December 1-4, 1999)

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"They keep asking questions and want to know more": Enhancing students' (and teachers') learning through curriculum integration.

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School of Education

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Paper presented at the AARE/NZARE conference (1999, December), Melbourne, Australia.

Abstract

As a pedagogy, Curriculum Integration (CI) has global and local significance as the central focus in teaching this way is to enhance students' learning through the vehicle of personal concerns and social issues. These issues and concerns form the basis of a negotiated curriculum of direct relevance to the socio-cultural world of young people in diverse settings. The challenge for research in CI is to investigate the learning process as it unfolds in all its complexity, and the role of the teacher in both scaffolding and promoting students' intellectual, social and emotional growth. Teachers' professional development in CI therefore, is crucial and includes a number of issues: teachers need to recognise and understand the complexity of learning - both their own learning and the learning of children; they need to courageously critique their own practice to bridge the gap between rhetoric and reality; and they need a commitment to power sharing when making curriculum decisions with students.

Introduction

Te manu ka kai i te miro, noona te ngahere.

Te manu ka kai i te maatauranga, noona te ao.

The bird that feeds on the miro owns the forest.

The bird that feeds on knowledge owns the world.

Many claims have been made about the merits of CI. The literature asserts that it: provides a meaningful curriculum; ensures that power and decision making is shared between teachers and students; helps students link discipline knowledge; promotes student independence and interdependence; makes maximum use of teaching time; draws upon issues of global and local significance to students; provides an inclusive and differentiated curriculum; and many other positive 'outcomes' (Beane, 1997; Boomer, Lester, Oncore & Cook, 1992; National Schools Network, 1998; Thornley & Graham, 1998). In the hands of talented teachers, such a pedagogy engages students in deep level learning which has lasting effects on their views of the world and their views of themselves as active learners.

One of the challenges for research in this field, and for the professional development of teachers, is to focus on both product and process in CI - the product can lose all meaning if teachers do not understand the complexity of the processes involved.

Professional development contract; Despite the odds

My colleague Barbara Whyte and I co-directed a New Zealand Ministry of Education contract in CI in 12 schools in our local region. The schools included primary, intermediate and high schools. Some of the school populations were predominantly white and middle class. Some were multicultural or predominantly Maori (indigenous New Zealander) and of low socio-economic status (SES). There were a number of constraints on the nature of the contract which influenced the efficacy of the professional teacher development programme. For example, only two teachers from each school participated and their principals' support varied from supportive to indifferent. Some teachers did not select to be involved in the contract but had been 'ordered' to - hardly an auspicious beginning for enthusiastic, growth-oriented participation. One of the intermediate schools had a strictly organised six week rotation around modules of work (based on subject specialisation) and two high school teachers experienced some harsh criticism from their peers when they attempted to inform staff about their work on the contract.

In addition to these constraints, there were two other salient points that hindered teachers' understanding and development in CI. Both of these points focus on the product or outcomes of pedagogy. The first was that most of the teachers felt that to a greater or lesser extent they were already teaching through CI and this contract would perhaps assist them with refining a few skills. The second stumbling block was that many teachers used the rhetoric of CI but did not convey the process in action, that is, what we witnessed in their classrooms was often vastly different from what they claimed they were doing. The interesting aspect of this

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phenomenon is that teachers generally did not realise that there was a mis-match between what they said they did, and what they in fact practised.

Power and decision-making

It quickly became beholden upon us and the facilitators on the contract to (diplomatically) challenge teachers' assumptions and assist teachers with unpacking the process of CI. This required teachers to carefully scrutinise aims and outcomes, explore meanings and consider ways to achieve the noble goals of CI outlined in the introduction:

- ensures that power and decision making is shared between teachers and students;
- helps students link discipline knowledge;
- promotes student independence and interdependence;
- makes maximum use of teaching time;
- draws upon issues of global and local significance to students; and
- provides an inclusive and differentiated curriculum.

At the start of the contract, power and decision-making was already considered a negotiated process with most of the teachers when they worked with their students. Their explanations regarding power sharing were that they often based their units of work on students' interests, that they encouraged students to bring relevant material to school, and that they gave students choices in the order in which activities were completed. It was not until teachers explored the level of negotiation achieved by Beane (1997), Brodhagen (1995), Boomer et. al. (1992) and others that they seemed to realise that little in fact had been negotiated or shared with their students. Teachers had planned most units in advance and consulted with students on a few minor and periphery details. The issue of power and decision-making was also highlighted when teachers were asked to compare and contrast thematic units and CI (see Beane, Ellsworth & Miller, 1996). This proved to be a watershed break-through in their understanding. In particular they needed to clearly differentiate between thematic approaches and CI and recognise that the former was driven by the teacher and his or her activities, while the latter was driven by negotiation and students' learning needs and strengths (see also Fraser & Charteris, 1998). Upon grasping the distinction one teacher commented, "I was like the blind man before, only 'seeing' one small part of the elephant - now I can see it all!"[middle school]

Sharing power in the classroom was difficult for some teachers who conveyed discomfort with abdicating their prominent role as decision-maker. It was evident that planning units, organising activities and deciding on assessment tasks was diligently and professionally undertaken by teachers with considerable regard for curriculum objectives. Sincere attempts were made to choose 'popular' topics that would excite and motivate children. A number of topics had been used in previous years and considered, therefore, successful. Beane (1997) also noted that appealing topics comprise the fare of many teachers' units. The effort involved in negotiating learning with students meant that teachers could not be fully planned in advance. They had to take cognisance of their students' questions and interests which could mean abandoning some of their own ideas. One teacher commented:

This challenges my effectiveness as a teacher. I lose some 'control' - an issue to deal with. Planning is less specific [I] can feel threatened...Have to learn how to plan with children - be more divergent and flexible. [senior primary teacher]

(Fraser & Whyte, 1999, p. 28)

Teachers had to concede that what they thought their children needed was not always in fact, what was required. They had to have the flexibility to draw up units with their students and move forward in directions that required multiple resources rather than one or two pre-organised guides that teachers may have relied on in previous years. In sharing the power, teachers became thrust into the role of researchers and investigators with their students and for some this caused anxiety. This is not to say that teachers did not already have considerable knowledge about issues and ideas that arose. They did but they also faced challenges with questions that went beyond what was known by teachers at the time. While it might seem obvious that this would occur there was still anxiety associated with this phenomenon. The anxiety, however, was *not* about not knowing all the answers, it concerned not knowing how to scaffold children's thinking as a result of not knowing what to aim towards. When teachers were out of their depth with the knowledge base required in certain topics, their questioning and scaffolding became shaky, superficial and aimless. It is little wonder then that a number of teachers experience discomfort when negotiating curriculum with students. It became readily apparent that the depth of questioning was contingent upon teachers' knowledge. As Snook (1992) and Ramsay & Oliver (1994) reminded us, teachers' knowledge remains crucial to effective pedagogy. In addition to content knowledge, teachers need to know about how to question students and scaffold their thinking to develop

students' learning most effectively. This crucial pedagogical skill was frequently commented on, for example:

I worked on helping the children to refine their questions but they had difficulty with developing direction for their questions - what they were going to do to investigate their issue.

(Fraser & Whyte, 1999, p. 28)

Scaffolding is also required when teachers assist students with necessary research skills. Sending students to the library, even very able students, to investigate a topic is not enough to sharpen their research skills. Teacher modelling and scaffolding takes place at many points during CI.

Sharing meaning: Gaps between rhetoric and reality

The university-school partnership developed in this contract had a number of challenges which is to be expected when different cultures coincide. As mentioned earlier, what teachers said they did with their students was often quite in contrast to what occurred in their classrooms (the classroom observations and feedback process during the contract enabled facilitators to see teachers in action). Almost without exception teachers claimed that they 'ran' a learner-centred classroom with students taking responsibility for their learning. In addition, a growing number of local schools advertise as 'learner-centred', responsive to individual needs and developers of students' full potential. However, what one teacher or school considers to be learner-centred can be quite different from another. Whyte (1995) also noted this variation with teachers (and principals) whose diversity of understanding of the term 'learner-centred' varied immensely. She found that the most telling indicator of teachers' understanding and practice of learner-centred education was their ability to facilitate students' taking of responsibility for learning. This finding was also reflected in the contract. Teachers seemed to espouse the products of CI (learner independence, student choice and decision making, learner centred teaching etc.) but many employed pedagogical processes that did little to enhance these goals, or actually ran counter to them (it should be noted that tertiary teachers are also not immune to this and can manifest a gap between what they espouse and how they teach). The list below demonstrates some examples:

Contradictions between product and process

Product	*Process*
Negotiating learning	Teachers devise detailed unit plans with syndicate in advance. Some minor amendments made later.
Students get to choose the order in which they complete activities	the teacher has organised.
School programme	rigidly modularised in advance.
Assessment driven teaching based on observable behaviours, checklists and specific	teacher-chosen objectives.
Responsibility	Teachers plan and organise all activities for students to complete.
Teachers ring bells or clap hands to signal when to change from one activity to the	next.
Teachers make all decisions on grouping	for classroom management purposes.
Linking knowledge	Teachers teach to separate curriculum objectives rather than incorporate objectives across more than one discipline that naturally coincide.
Students do activities from a range of curriculum areas	determined by the

teacher around a central theme like 'plastics'.

Teachers and students do not draw upon past learning to inform present investigations - once a unit is over it is considered finished.

Such contradictions and mis-matches provide considerable challenge when engaging teachers in professional development in CI. The processes involved in CI are demanding, complex and highly rewarding for both teachers and students. However, the effort required to change one's practice can be considerable and resistance readily emerged. It is understandable that a number of teachers are reluctant to alter a 'system' they have honed and polished over many years and which produces results for some students. However, a few teachers (especially those in low SES or low decile areas) quickly realised the significance of CI for the students they taught and were eager to adapt their pedagogy. For example, one teacher wryly commented:

Most of what I teach is not relevant to my kids [high school teacher].

This teacher honestly recognised the mis-match between the material she taught her students, how she taught it, and what her students needed. This mis-match is exacerbated by cultural differences. Similarly, Nuthall and Alton-Lee (1997) stated that:

> Some students have to learn to live in two cultures: the culture of their home and friends, and the culture of the teacher. Other students need only live in one culture because their home and friends share the culture of the teacher. For some students who live in two cultures, succeeding in the classroom is often very difficult. The teacher uses hidden meanings, makes assumptions, and implies things that they cannot understand. (p. 8)

The effort required for CI can seem rather extreme given the adequacy of many teachers' practice and many students ability to exist in two cultures. But if students are to have the challenging curriculum they deserve, if they are to be both extended and motivated on a daily basis to grow beyond expectations, and if they are to experience a curriculum that takes who they are seriously, then teachers must move beyond the adequate.

Moving beyond the adequate: Witnessing students' growth

The test of any professional development is the extent to which long term change is achieved, change which does not just revert to 'wilderness' once the gardener moves on (Mark Cosgrove, personal communication, 1998). It cannot be claimed that long term change was the case for all participants. What can be claimed is that teachers appeared excited about the changes they saw in their students as a result of CI. Students' learning, enthusiasm and development were the impetus for teachers' acceptance and belief in CI. And as teachers' confidence and competence with CI pedagogy grew, the changes they witnessed in their students provided an ongoing catalyst for teachers' growth. Teachers wisely wanted evidence of the worth of CI and with-held acceptance until they could see what happened for *their* children in *their* settings.

Some of the changes in their students that teachers reported included the following:

My kids didn't want to see the slides at the zoo [that the zoo officer has organised for school trips] they wanted to keep asking her questions. [junior class]

The learning activities are more spontaneous, driven by children in their search for answers about their world. [middle primary]

The children don't need to satisfy the teacher as much as they used to. They gain pleasure out of reaching their own aims. [junior class]

I was really surprised by the range of questions they came up with. [teacher of five and six year olds]

The children are more returning to things, like um, the greenhouse effect, and revisiting it at a deeper level. They're using the ideas they developed earlier in the year to set up experiments and extend their knowledge later in the year. They never used to do that. [middle primary]

I've been so impressed by the quality of the children's writing and discussions...now they comment on each other's ideas back and forth.[middle primary]

(Fraser & Whyte, 1999, pp. 1-2)

These comments indicate that teachers both appreciated and enjoyed their students active construction and pursuit of knowledge. Teachers also seemed to recognise that students could select what was important for their learning and set goals, draw upon their prior knowledge, and co-construct ideas in social groupings.

The teachers also commented on the barriers and challenges to CI:

It takes a while to create a suitable culture in a classroom for CI to be successful. There is a need to teach social skills in order to fully involve children in negotiating curriculum.[middle primary]

Children who are unmotivated and too accepting of issues, rather than challenged by them.[]unior primary]

Very difficult with timetable restrictions and constant interruptions to class time.[intermediate]

Not being accepted by other teachers in the school. [high, intermediate and primary school]

Appropriate resources aren't always easy to find. [senior primary]

Maths is still taught separately for the most part.[middle primary]

(Fraser & Whyte, 1999, p. 21)

These comments indicate a range of different factors that influence any pedagogical practice. It seems that most of these points relate broadly to constraints on teaching rather specifically to employing CI. However, teachers' feedback indicates that mathematics continues to be the subject that many prefer not to integrate and the reasons for that could be numerous: teachers' own attitudes and confidence with maths; the sequential nature of the maths curriculum; the dis-embedded nature of some maths teaching and maths resources; the rather forced attempts at 'real-life' applications in problem solving which do little to support CI; and possibly, a lack of transfer about how children learn to the learning of mathematics.

CI can provide a differentiated curriculum that meets the needs of a wide range of students including those with special needs and those who are gifted and talented. An inclusive curriculum can be achieved through CI when teachers differentiate programmes to meet the needs of all learners. In fact, CI requires that teachers differentiate in order to capitalise on students' interests, questions, issues and concerns. Tomlinson (1999, p. 48) argued that a differentiated classroom is based on the following principles:

1. The teacher is clear about what matters in subject matter.
2. The teacher understands, appreciates, and builds upon student differences.
3. Assessment and instruction are inseparable.
4. The teacher adjusts content, process, and product in response to student readiness, interests and learning profile.
5. All students participate in respectful work.
6. Students and teachers collaborate in learning.
7. Goals of a differentiated classroom are maximum growth and individual success.
8. Flexibility is the hallmark of a differentiated classroom.

These principles also underpin the practice of CI. In order to assist students with drawing together their questions and concerns teachers help them with categorising, synthesising and comparing ideas. The 'big picture' emerges during such negotiations with students deciding on the overall theme for a study (e.g., 'Water is precious, but it can be a nuisance', Charteris, 1998). Responsiveness to students' needs and interests is essential when teachers draw upon issues that concern and affect students. Students' readiness is ascertained through ongoing assessments which determine what skills need to be taught and the timing of such teaching to ensure students' engagement. The focus on issues that concern students ensures that teachers respect and acknowledge students, drawing upon students' cultural capital to develop meaningful curriculum experiences. For example, William Pua (1998) teaches high school economics in South Auckland. He incorporates elements of Pacific rap culture to teach the concepts of economics to his predominantly Pacific island students. By drawing upon this culture in his teaching Pua is able to cover the required curriculum through a vehicle which has high interest and relevance to the lives of the young people he teaches. He argued that the influence of hip hop/rap culture on Pasifika youth is often overlooked yet it has a strong influence on his students' language, attitudes, fashions and psyche. Furthermore, by acknowledging Pacific rap culture he is

acknowledging what is valued by his students in a way that conveys respect for their lives and their evolving identities as Pasifika people. The work of Pua and other inspirational teachers highlights the importance of a culturally relevant curriculum. This issue in respect to Maori culture is discussed below.

Cultural relevance

It seemed evident to us as the contract proceeded that the teachers who most readily saw the relevance of CI to their students were the teachers in low SES, predominantly Maori or multicultural schools. Furthermore, these are the schools that are planning school-wide development in CI for 2000 and beyond. Beane (personal communication, 1998) also noted this enthusiasm from low SES schools. He also found that high SES areas are likely to understand and utilise CI. He speculated that the middle SES areas appear to be the most resistant and the most defensive. The possible reasons for this are far from clear or conclusive. However, empirical data may assist with investigating this to tease out the possible factors involved.

Socio-cultural theory reminds us that learning is influenced by students' culture, their social interactions and their 'inner speech' in an iterative, dynamic process (Vygotsky, 1978). Research from this perspective tends to scrutinise students' talk and actions in classroom settings including students' conversations with peers and their private musings. Drawing upon the socio-cultural perspective Nuthall and Alton-Lee (1997) argued that:

> The evidence is that thinking and learning are essentially the same processes, and they are as much matters of social interaction and of language use, as they are matters of the mind. (p. 11)

While this contract did not focus on students' interactions there is some reported accounts from teachers that students found CI culturally relevant. The concept of a culturally relevant pedagogy (Bishop & Glynn, 1999; Ladson-Billings, 1994) articulates smoothly with CI. When teachers take the personal concerns of students seriously and examine social issues with them that are drawn from the students' cultural perspectives, they are acknowledging who students are, what they bring to the classroom, and how their interactions with others influence their thinking. They are acknowledging students' ethnicity, culture, class, disability, gender and so forth. Moreover, teachers who teach this way regard knowledge as a social construction. They realise that knowledge is not static and unchanging but can be "continuously re-created, recycled, and shared" (Ladson-Billings, 1994, p. 81) with students. This perspective views curriculum "as an organic, human knowledge construct, that helps learners make sense of their personal and social worlds and enables them to live and grow effectively as informed active participants of society" (Fraser & Whyte, 1999, p. 31).

For teachers in Kura Kaupapa Maori or immersion classes (where the language of instruction is Maori) cultural relevance begins with the protocols of Maori culture - powhiri (formal welcome onto marae or meeting place), karakia (prayers), whakapapa (genealogy), mihimihi (greeting and introduction), which are integral parts of the school and class curriculum. Students in immersion contexts learn these protocols and when and how it is appropriate to use them. Oral language, communication, history and ritual are all learnt and practised within the school creating an important connection with community and tribal culture.

Therefore, CI provides a 'natural' extension of this cultural integration. Students' culture is acknowledged and drawn upon when considering what to study and how to learn. There was one teacher from an immersion Maori classroom in the contract and she commented on the relevance of CI to her nine and ten year old students:

This [CI] is more fitting with te ao Maori (the Maori world) as you're not putting things into discrete categories...

The kids wanted to find out more about Tainui (local tribe) - most of them are Tainui in the class and know their whakapapa (genealogy) but they wanted to know about the origins of their tribe, about Hawaiki, the local Tainui radio station, the waka (canoe) that their ancestors came on, where the river starts and ends and the history of the geography around Kawhia (where the waka landed). This required access to grandparents' knowledge, discussions, maps, phone calls, the internet and faxes...

Children learn so much from their mistakes you know. They thought that Tainui FM radio would have lots of answers to their questions and they rang the station and arranged a meeting with the director. They were totally surprised to find that the director was a Pakeha (white New Zealander) who knew nothing of the history of Tainui. They also sent a fax to Tau Henare (Minister of Maori affairs) regarding their questions about native birds and trees - they thought he was the expert on te ao Maori. They learnt that the place they needed to contact was Lands and Conservation.

The extract above reveals some of this teacher's ability to let students discover for themselves who can help them. She allows students to take responsibility for their learning including the responsibility for mistakes, dead-ends and revisions. She wisely withheld the temptation to correct students' choices before they had a

chance to discover for themselves the efficacy of these choices. She modelled willingness to share power and decision-making and avoided judging students' decisions.

Like the others, this teacher was sceptical of CI at the outset:

I thought it would be too woolly when I started. I had hard children, street-wise and all that sort of thing. But [through using CI] they made good choices that I didn't think they could - that showed me where they're at. They went beyond where I thought they were. What's more, the children realised they have abilities...I also became more involved in teaching children the skills they needed - telephone skills, questioning - all became more specific.

She also noted that her students took greater control of accessing information:

Our library times changed because of the focus on what they wanted to find out. They would say "Whaea, we need to go to the library!". We couldn't find all they needed in our school library so they wrote to their parents to ask if they could go to the main library in town after school. Eight children were given permission to go on a regular basis - these are children who had previously never been to a library outside school.

I asked this teacher what parents' attitudes and responses had been. She stated that some parents felt threatened by the questions their children asked as they did not know all the answers. In terms of the cultural concept of 'not questioning one's elders' the teacher denied that this was a problem or impediment. She claimed that the children quickly learnt when to 'draw the line' in terms of respect for elders, especially with grandparents, but this did not mean that they curtailed questioning them. They learnt how to do this appropriately and respectfully. At the students' request, three grandparents also visited the class to answer questions and discuss issues related to their own schooling.

The teacher reminded me that the wharenui (meeting house) is a place where ideas are shared and debated and questions are raised. This tradition gives license for students to question elders in ways that are culturally congruent. Furthermore, what is clear from this teacher's practice is that the students' concerns and interests dominate the discourse of the classroom. CI ensures that meaningful connections are made between students' lives and the curriculum. As Bishop & Glynn (1999) argued:

> ...whatever the approach taken to curriculum integration, there needs to be an assurance that neither the curriculum content nor the pedagogical method preclude the development of collaborative learning partnerships which respond to the specific cultural needs and interests of the learner. (p. 194)

The teacher's pedagogy in this example reveals her ability to collaborate with her students and their whanau (families) to form partnerships that enhance learning.

Conclusion

Many argue that the improvement of students' learning is inextricably linked to the improvement of teaching (e.g., Darling-Hammond, 1998). CI promotes a 'high' pedagogy (Beane, 1997) that is culturally responsive, relevant and engaging (Bishop & Glynn, 1999). The skill, knowledge and passion required for such a pedagogy is a considerable challenge for teachers but one which many welcome when they realise the learning gains for their students. Unpacking the process of CI enables teachers to understand the crucial details and depth of the learning and teaching. A focus on CI processes is essential if teachers are to move beyond rhetoric and contradictions in their philosophy and their practices. These processes bring teachers closer to how students learn, and how much they *can* learn.

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